What is claimed is:

1. A pressure transducer comprising:

a substrate having a first surface and a second surface opposed to the first surface;

a fixed electrode formed in the first surface of said substrate;

a diaphragm attached at a peripheral portion thereof to the first surface of said substrate so as to form a cavity between a central portion thereof and said fixed electrode, said diaphragm having a moving electrode opposed to said fixed electrode through the cavity and being deformed in response to an applied pressure to change a distance between the moving electrode and said fixed electrode as a function of the applied pressure; and

a hole formed in said substrate which extends from the second surface to the cavity.

2. A pressure transducer as set forth in claim 1, further comprising holes formed in said substrate which extend ffom said second surface to the cavity and which are so arranged that adjacent two of all of the holes are disposed at a regular interval away from each other.

3. A pressure transducer as set forth in claim 1, said diaphragm is corrugated.

4. A pressure transducer as set forth in claim 3, wherein said

diaphragm has a plurality of waved portions formed coaxially.

5. A pressure transducer as set forth in claim 1, further comprising a groove which is formed in the first surface of said substrate within the cavity and which leads to said hole.

6. A pressure transducer as set forth in claim 1, further comprising a diaphragm support member disposed within the cavity in contact with an inner wall of the peripheral portion of said diaphragm.

7. A pressure transducer as set forth in claim 1, wherein said substrate is made of a semiconductor substrate having integrated circuit elements which form a detector designed to measure a capacitance between the fixed and moving electrodes.

8. A pressure transducer as set forth in claim 1, wherein said diaphragm is made of an inorganic material.

9. A pressure transducer as set forth in claim 8, wherein said inorganic material is a compound of silicon and one of oxygen and nitrogen.

10. A pressure transducer as set forth in claim 1, wherein said diaphragm has a wave formed on the peripheral portion thereof, the wave projecting to the first surface of said substrate to increase

adhesion of said diaphragm to the first surface of said substrate.

11. A pressure transducer as set forth in claim 1, wherein said substrate has a groove formed in the first surface, and wherein the peripheral portion of said diaphragm partially projects to the groove to increase adhesion of said diaphragm to the first surface of said substrate.

12. A method of manufacturing a pressure transducer comprising the steps of:

preparing a substrate having a first surface and a second surface opposed to the first surface;

forming a fixed electrode in the first surface of said substrate;

forming a sacrificial layer over said fixed electrode;

forming a diaphragm layer made of an insulating material over said sacrificial layer;

forming a hole which extends from the second surface of said substrate to said sacrificial layer; and

injecting gasses into said hole to remove said sacrificial layer in dry etching to form a cavity so that said diaphragm layer is deformed in response to an applied pressure.

13. A method as set forth in claim 12, further comprising the step of forming at least one waved portion on the first surface of said substrate.

14. A method as set forth in claim 12, further comprising the step of forming at least one waved portion on a surface of said sacrificial layer.

15. A method as set forth in claim 12, wherein said substrate is made of a semiconductor substrate having integrated circuit elements which form a detector designed to measure a capacitance between the fixed and moving electrodes.

16. A method as set forth in claim 12, wherein said diaphragm is made of an inorganic material, and said sacrificial layer is made of an organic material.

17. A method as set forth in claim 12, wherein said diaphragm is made form a compound of silicon and one of oxygen and nitrogen.

18. A method as set forth in claim 12, wherein said sacrificial layer is made of polyimide.

19. A method as set forth in claim 12, wherein the removal of said sacrificial layer is achieved in the dry etching using oxygen plasma.

20. A method as set forth in claim 12, wherein said gas injecting step removes said sacrificial layer so as to leave a peripheral portion of said sacrificial layer.

21. A method of manufacturing a pressure transducer comprising the steps of:

preparing a substrate having a first surface and a second surface opposed to the first surface;

forming a fixed electrode in the first surface of said substrate;

forming an insulating layer over said fixed electrode;

forming a sacrificial layer on said insulating layer;

forming a diaphragm layer made of a conductive material over said sacrificial layer;

forming a hole which extends from the second surface of said substrate to said sacrificial layer; and

injecting gasses into said hole to remove said sacrificial layer in dry etching to form a cavity so that said diaphragm layer is deformed in response to an applied pressure.

22. A method as set forth in claim 21, further comprising the step of forming at least one waved portion on the first surface of said substrate.

23. A method as set forth in claim 21, further comprising the step of forming at least one waved portion on a surface of said sacrificial layer.

24. A method as set forth in claim 21, wherein said substrate is made of a semiconductor substrate having integrated circuit elements which form a detector designed to measure a capacitance

between the fixed and moving electrodes.

25. A method as set forth in claim 21, wherein said diaphragm is made of an inorganic material, and said sacrificial layer is made of an organic material.

26. A method as set forth in claim 21 wherein said diaphragm is made form a compound of silicon and one of oxygen and nitrogen.

27. A method as set forth in claim 21, wherein said sacrificial layer is made of polyimide.

28. A method as set forth in claim 21, wherein the removal of said sacrificial layer is achieved in the dry etching using oxygen plasma.

29. A method as set forth in claim 21, wherein said gas injecting step removes said sacrificial layer so as to leave a peripheral portion of said sacrificial layer.

30. A method of manufacturing a plurality of pressure transducers using a signal substrate comprising the steps of:

preparing a single substrate having a first surface and a second surface opposed to the first surface;

forming fixed electrodes in the first surface of said substrate;

forming a sacrificial layer on each of said fixed electrode;

forming a diaphragm layer made of an insulating material over

each of said sacrificial layer;

forming a hole which extends from the second surface of said substrate to each of said sacrificial layer;

forming a cutting groove between adjacent two of the pressure transducers for separating the pressure transducers from each other; and

injecting gasses into said hole to remove said sacrificial layer in dry etching to form a cavity so that said diaphragm layer is deformed in response to an applied pressure.